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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,088	09/10/2001	Gilbert Theo Hinze	HINZE 1	1064

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EXAMINER

CHORBAJI, MONZER R

ART UNIT	PAPER NUMBER
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1744

DATE MAILED: 06/26/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/830,088

Applicant(s)

HINZE, GILBERT THEO

Examiner

MONZER R CHORBAJI

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

This non-final office action is in response to the Amendment/RCE received on 05/05/2003

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 32 and 41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 32, line 15, applicant recite the limitation "either concurrently or successively". Such a teaching is not found in the disclosure. The same applies to claim 41.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 32 and 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 32, line 15, the meaning of such a limitation "treating a container with at least one of said solutions, either concurrently or successively" is not understood. For example, does the applicant mean to treat the container with both cathodic and anodic

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solutions or to treat first with the cathodic solution then second with the anodic solution?

Explanation and rewarding of the claims are needed to understand the meaning of claim

32. The same applies to claim 41.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 32-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doi (EP 0,802,164) in view of Bakhir et al (U.S.P.N. 5,427,667).

With respect to claims 32, 41-42, and 44, Doi teaches the following: a method (page 1, lines 5-8) for treating bulk food storage containers (page 5, lines 51-55) in a bulk food storage facility by producing electrochemically activated aqueous solution, treating fresh produce with electrochemically activated aqueous solution (page 5, lines 54-55) during storage in a food container (page 5, line 55), and the means for producing the activated aqueous solution can be transported (page 15, lines 50-53) such that a

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transporter is inherently needed to transport the means. In addition, Doi discloses that electrolytic cell with a diaphragm between the anode and the cathode resulting in separating the cell into an anode chamber and a cathode chamber is known. As a result, such a cell is capable of producing separate anodic and cathodic solutions that are applied separately (page 1, lines 27-37). Doi also, teaches of adding one solution to another (page 1, lines 54-59) such that the mixed solution is applied concurrently.

However, Doi fails to disclose an electrolysis device having a through-flow electrochemical cell with two co-axial cylindrical electrodes with a co-axial diaphragm between the two electrodes so as to separate an inter-electrode space into a catholyte chamber and an anolyte chamber such that two solutions are produced separately.

Bakhr et al discloses an electrolysis device (figure 1a, 5) having a through-flow electrochemical cell (figure 2, 15, 14, 12, and 13) with two co-axial cylindrical electrodes (figure 2, 7 and 6) with a co-axial diaphragm between the two electrodes (figure 2, 8) so as to separate an inter-electrode space into a catholyte chamber and an anolyte chamber such that an anodic (i.e., oxidant) and a cathodic (i.e., reductant) solutions are produced separately (col.9, lines 37-39). It would have been obvious to one having ordinary skill in the art to modify Doi method and apparatus to include a diaphragm between the cathode and the anode in order to optimize the electrolysis process by using such a diaphragm (col.4, lines 53-55).

With respect to claim 33, Doi teaches that ice made from the electrochemically activated aqueous solution is used to pack seafood in the container (page 10, lines 1-4). Also, Doi discloses that the electrochemically activated aqueous solution can be used in

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the food industry (page 5, lines 54-55). Thus, it would have been obvious to apply ice made from the electrochemically activated aqueous solution in packing fresh produce in the container as taught by Doi.

With respect to claim 34, Doi teaches that a small amount of aqueous salt solution is added (page 1, lines 24-26) before the electrolysis process. However, a small amount is inclusive of the range in claim 34. Furthermore, optimization of such a parameter (concentration) is well within the scope of the artisan.

With respect to claim 35, since the instant claims and Bakhir et al produce separate anolyte and catholyte solutions using the same apparatus, then such solutions are intrinsically labile as well as would intrinsically disappear in about 96 hours with relatively no residues being produced.

With respect to claims 36 and 38, Bakhir et al discloses a redox potential and pH values (Table 2).

With respect to claims 37 and 39, Doi discloses that an anion-containing solution or a cation-containing solution inherently includes hydroxide ions (page 1, line 20).

With respect to claim 40, Doi teaches that the activated aqueous solution can be applied to various fields (page 16, lines 41-43). This intrinsically means that the physical characteristics of the activated aqueous solution can be easily manipulated depending on the type of field.

With respect to claim 43, Doi discloses that the activated aqueous solution be applied to food facilities (page 5, lines 54-55) such that the activated aqueous solution is

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in iced form (page 10, lines 1-4). Thus, in order to form the activated solution into ice, it is credible that Doi bulk food storage facility includes a freezing means.

Response to Arguments

8. Applicant's arguments with respect to claims 32-44 have been considered but are moot in view of the new ground(s) of rejection.

On page 16 of the response, applicant argues, "Doi teaches a process for treating water electrolytically in an electrolytic cell without a diaphragm between the cathode and the anode". Doi discloses that it is known to have electrolytic cells wherein the cathode and the anode are separated by a diaphragm such a cell inherently produces two separate cationic and anionic product streams (page 1, lines 22-24). Also, Bakhir et al discloses an electrolysis device (figure 1a, 5) having a through-flow electrochemical cell (figure 2, 15, 14, 12, and 13) with two co-axial cylindrical electrodes (figure 2, 7 and 6) with a co-axial diaphragm between the two electrodes (figure 2, 8) so as to separate an inter-electrode space into a catholyte chamber and an anolyte chamber such that an anodic (i.e., oxidant) and a cathodic (i.e., reductant) solutions are produced separately (col.9, lines 37-39).

On page 17 of the response, applicant argues, "Doi is silent with respect to diverting some or all of the anolyte or catholyte through the counter-electrode chamber". Such a limitation is not recited in the claims. In addition, applicant argues, "the present invention calls for sending the entire feed through one electrode chamber, and thereafter recalculates all or part of the electrolyzed solution through the other electrode chamber". Again a limitation is not recited in the claims.

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On pages 20-21 of the response, applicant argues, "An analysis of a full ionic balance and electrostatic charge balance of an acidic solution, electrolyzed as described by Doi, will reveal that although it is acidic with respect to pH and has a net excess of hydrogen ions, it is in fact ionically balanced, having been produced and harvested as a mixed ion electrolyte. The solutions produced in the present invention, are not in a state of ionic balance". Again such limitations are not recited in the claims. However, Bakhir et al produces separate anolyte and catholyte solutions that inherently are not in state of ionic balance.

On pages 21-22, applicant argues, "Applicant have found an optimal balance between balance efficacy and the unwanted presence of chlorine by using a salt solution of from 3 to 10%". Doi discloses that it is known to add salt to the water to be electrolyzed (page 2, lines 9-10) such that determining the proper amount of the salt is an obvious result of routine experimentation.

Conclusion

9. The prior art made of record but not relied upon is considered pertinent to applicant's disclosure. Both Bakhir et al (U.S.P.N. 5,783,052) and Shimamune et al (U.S.P.N. 6,126,796) disclose using catholyte and anolyte solutions as bactericidal agents generated by through-flow electrochemical cells.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONZER R CHORBAJI whose telephone number is (703) 305-3605. The examiner can normally be reached on M-F 8:30-5:00.

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11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROBERT J WARDEN can be reached on (703) 308-2920. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 305-7719 for After Final communications.

12. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Monzer R. Chorbaji *MRC*
Patent Examiner
AU 1744
June 19, 2003

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